National Heart Attack Alert Program
Coordinating Committee
and Subcommittees

MEETING SUMMARY REPORTS

May 3–4, 1999
Reston, Virginia

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NATIONAL HEART ATTACK ALERT PROGRAM (NHAAP)
COORDINATING COMMITTEE MEETING

May 3–4, 1999
Reston, Virginia

HIGHLIGHTS

- Three new representatives were welcomed to the Coordinating Committee: Mr. David Simmons of the National Black Nurses Association, Dr. Gerald DeVaughn of the Association of Black Cardiologists, and Mr. Alexander Kuhn of the American Red Cross.

- Extensive review and discussion of the REACT (Rapid Early Action for Coronary Treatment) research program took place during the full Committee meeting and each of the subcommittee breakout sessions.

- Ms. Patricia Hamilton reviewed plans for the American Heart Association's Operation Heartbeat, a program focused primarily on issues related to cardiac arrest.

- Ms. Mary Hand reviewed the initial recommendations of the Public Education Advisory Group on NHAAP directions for educating patients and the public.

- Chairs of the Science Base Subcommittee, Education Subcommittee, and Health Systems Subcommittee reported on the deliberations of their groups with respect to the REACT project.

- Dr. Jeffrey Michael of the National Highway Transportation Safety Administration reported on a proposal for a new system to educate emergency medical services (EMS) providers.

- Dr. Michael invited NHAAP members to attend a National Emergency Number Association conference on wireless emergency access, on May 21, 1999, in Alexandria, Virginia.

- Dr. Robert Christenson announced that the American Association for Clinical Chemistry and the International Federation of Clinical Chemistry Societies are establishing guidelines for clinical laboratory testing of patients with acute coronary snydromes.

- Dr. James Atkins reported that the American College of Cardiology will host a Bethesda Conference on emergency cardiac care on September 13 and 14, 1999.

- Ms. Hand announced that the next NHAAP Coordinating Committee meeting will be held in February 2000 (the date has since been set for February 28–29, 2000).

National Heart Attack Alert Program

Coordinating Committee Meeting

May 3–4, 1999
Reston, Virginia

COORDINATING COMMITTEE MEETING: Part I
NATIONAL HEART ATTACK ALERT PROGRAM (NHAAP)
NATIONAL HEART, LUNG, AND BLOOD INSTITUTE (NHLBI)

Meeting Summary
May 3, 1999

WELCOME AND INTRODUCTIONS [Ms. Mary Hand]

Ms. Hand convened the meeting and welcomed the participants. She noted that the committee chair, Dr. Lenfant, would join the group the next day and that new committee members would be introduced at that time.

Ms. Hand said that this meeting would be devoted to the area of public education about heart attack symptoms. To date, the committee's efforts have focused on educating emergency departments (EDs), emergency medical services (EMS), and community settings—not patients or bystanders—about the importance of rapid identification and treatment of individuals with symptoms and signs of a heart attack. The REACT (Rapid Early Action for Coronary Treatment) research program was developed to help examine the effectiveness of a public education campaign directed toward this issue. Results of the REACT study were formally presented at the American Heart Association (AHA) Scientific Sessions last November, and the investigators met with NHLBI staff and Executive Committee members in October for a preview of the results. Most of this 2-day meeting will be devoted to a presentation of the REACT results and subsequent subcommittee deliberations about what they mean in terms of directions for the NHAAP.

Attachment A provides a list of attendees, and Attachment B is the meeting agenda.

PURPOSE AND DESIGN OF THE REACT RESEARCH PROGRAM [Dr. Denise Simons-Morton]

Dr. Simons-Morton, the NHLBI Project Officer for the REACT program, described the problem of acute myocardial infarction (AMI) and presented data from a variety of studies showing the time-dependent effect of thrombolytic agents in particular. The shorter the duration of time from onset of symptoms to treatment, the more likely patients' treatment will be effective in terms of morbidity and mortality from AMI.

A few intervention studies attempting to decrease patient delay achieved changes in median delay times by as much as 48 minutes, but they had the following limitations: they lacked comparison groups, focused on media information only, were too small to achieve statistical power, and were conducted mainly in other countries.

In the early 1990's after it began, the NHAAP recommended additional research and worked in collaboration with one of NHLBI's research divisions to develop an initiative in this area. This culminated in the release of an RFA titled "Community Intervention To Reduce MI Delay." The funded study was named REACT, and the intervention was known as "Heart Attack REACT: A Community Education Project."

Dr. Simons-Morton described the following aspects of the REACT study:

- REACT was a large multicenter study conducted at five field sites: the University of Alabama, University of Massachusetts, University of Minnesota, University of Texas at Houston, and University of Washington in conjunction with Oregon Health Sciences University. Each site had two pairs of communities (intervention and control) matched on the basis of similar demographics. The sites covered representative areas of the country, and the racial/ethnic composition was roughly comparable with the U.S. population as a whole.

- The New England Research Institute was the Coordinating Center that provided support for all sites. The NHLBI was the site for the Project Office, a Protocol Review Committee, and a Data and Safety Monitoring Committee.

- REACT staff included the investigators, field workers (interventionists, data collectors, and data coordinators—one or two full-time staff per town), and a steering committee made up of the principal investigators (PIs) and the project officer. There were five subcommittees—for design, analysis, intervention (including working groups for public education and patient/provider education), management and quality control, and publications.

- The goal of the 4-year study was to test a community-based intervention to reduce patient delay time for AMI symptoms and to evaluate effects on delay times, medical care utilization, and outcomes.

- Secondary aims were to develop the intervention program based on sound behavior-change theory and to evaluate the effects of the intervention on (1) factors influencing patient delay (such as knowledge, attitudes, and symptom attribution and awareness), (2) the population with AMI symptoms, (3) medical care and patient outcomes, (4) EMS and ED usage, and (5) population subgroups.

Dr. Simons-Morton pointed out that the study has generated a huge amount of data; the main results would be presented today, but many other factors are being examined.

ORGANIZATION OF REACT INTERVENTION: IMPACT ON KNOWLEDGE, AWARENESS, AND ATTITUDES [Dr. John Finnegan]

REACT investigator Dr. John Finnegan, Associate Professor, School of Public Health, University of Minnesota, provided an overview of the intervention, which followed a social marketing model and lasted from March 1996 to March 1998. (A copy of Dr. Finnegan's slides for this presentation is provided in Attachment C.) The first part involved community, professional, and high-risk patient education; media campaigns were added later.

Formative evaluation, a key part of the study, involved a literature review, data collection, and focus groups with health professionals and with three target audiences:
(1) patients who had a previous MI, (2) persons at high risk for MI, and (3) bystanders. The formative evaluation indicated the following:

- Most persons experienced mild symptoms that gradually worsened, unlike the expectations of a "Hollywood" heart attack.

- Individuals had a tendency to attribute symptoms to other causes. This was especially true among older persons with multiple health conditions.

The formative analysis led to the following recommendations: change and shape persons' expectations about heart attacks, instruct them about what actions to take and clarify the benefits of taking action, and give them permission to act. Dr. Finnegan noted that most barriers to acting are self-perceptual; external barriers include emergency medical services and accessibility (cost ranks low). Specific recommendations for the intervention included the following:

- Address the stereotype of heart attack symptoms and who may be at risk.

- Address the perception that heart disease is a male disease.

- Provide the following messages:

  - Discuss heart attack risk with your physician, spouse, and other family members.

  - Call 9-1-1 or get to the hospital fast. Do not drive yourself.

  - Know that symptoms that persist after 15 minutes require action.

  - Health care providers want you to act. It is better to be safe than sorry.

  - Know that bystanders need to be assertive.

- Use mass media to reach most persons; address literacy issues and reach minority and low socioeconomic status groups who have less access to the mass media.

- Develop interpersonal strategies for communication between patients and health professionals.

- Use group strategies at worksites and other organizations.

Four types of intervention strategies were developed:

- **Community organization**: consulting with community leaders; working with them to form advisory boards and coalitions; selecting a lead agency.

- **Public education**: mass media, small media, group presentations, and magnet events.

- **Professional education**: continuing education conferences; mass mailings; programs for physicians, nurses, and emergency medical technicians.

- **High-risk patient education**: cardiac rehabilitation programs; clinic/hospital classes; clinic interactions with patients.

The 18-month media campaign strategy was launched in six quarters during which the following messages were emphasized: (1) a general message about recognizing symptoms and responding to them rapidly, (2) having a survival plan, (3) women and heart attacks, (4) symptom recognition, (5) a bystander message, and (6) calling EMS via 9-1-1.

Intermediate Results

Dr. Finnegan provided results of phone surveys that were conducted to track community awareness and knowledge of the REACT message and program. Four waves of phone calls were directed at (1) the general public, (2) persons with heart attack symptoms who were released from the ED, and (3) persons with symptoms who were admitted to the hospital. The respondents had a mean age in the low 40s (the hospitalized group was 10 years older) and were mostly female and white, though there was a good representation of minorities. Key findings are summarized below:

- All three groups had comparable knowledge about chest pain as a symptom of heart attack but less knowledge of other symptoms and little knowledge of thrombolytic drugs. The campaign achieved some increases in appropriate prehospital beliefs in all three groups.

- In the general public group, the campaign achieved some increases in awareness of heart attack messages and awareness of the REACT name. There were no differences in

awareness of heart disease as a cause of female mortality, the importance of a plan of action, calling 9-1-1, or talking about heart attack symptoms with health care workers.

- Among patients released from the ED, respondents in both intervention and control communities reported little talking about heart attack symptoms with health professionals or families. Relatively few (about 30 percent) felt they knew what to do in case of heart attack symptoms (i.e., in the future). Approximately 25 percent reported being told to call their personal physician if symptoms returned, fewer than 10 percent were told explicitly to call EMS 9-1-1, and half were told to go to the ED. The good news was that ED staff made released patients feel comfortable about coming to the ED.

- Among inpatients in both intervention and control groups, about half talked with health professionals in the hospital about what to do in case of a heart attack, and about 80 to 90 percent felt they knew what to do about symptoms.

DATA PRESENTATION—REACT MAIN RESULTS [Dr. Russell Luepker]

REACT investigator Dr. Russell Luepker, Head, Division of Epidemiology, University of Minnesota, noted that the primary population for the study's end points was persons who presented to hospital EDs with suspected ischemic heart disease. (A copy of Dr. Luepker's slides for this presentation is provided in Attachment D.) Data were collected in EDs for all patients ages 30 or older with symptoms of ischemia. Transfer patients were excluded. Staff were trained to ask questions about symptoms in a standardized manner, including the time of onset of symptoms. Demographic data were also collected. Trained persons abstracted hospital records looking for target diagnoses, transport methods, procedures, and other information. Quality control involved abstractor training, site visits by Coordinating Center staff, test cases for abstractors, and continued training of ED nurses.

The primary end point was the rate of change of delay time after the intervention began. The delay time was available for about 70 percent of patients admitted to the hospital. The primary analysis method would allow detection of a 32-minute or greater decline in delay time between the intervention and control communities.

Major Findings

- There is a gradual downward slope in delay times (in both intervention and control groups), but no significant differences. Reducing delay time in the intervention group was the main aim of the study, but this did not occur. One explanation may be that the baseline median delay time was 2 hours 21 minutes, substantially lower than most of the published studies when the study started. No subgroup did better or worse in delay time in either the intervention or control groups.

- More individuals presented at the ED, but the increase was not significant and most were released. The increase was greater for women than men.

- There were significant increases in calls to 9-1-1 and EMS use. The intervention and control communities were identical at baseline, and use rose 5 to 10 percent in the intervention group. Subgroup data are not yet available.

- There was significantly more reperfusion within 1 hour after ED arrival in patients discharged as AMI in intervention communities, but this fell with time. Much of the difference had to do with a fall in the comparison communities, which had higher levels at baseline. There was a modest rise in the intervention community.

Other Findings

- The older the patient, the longer the delay time.

- Women were likelier to have longer delay times than men.

- African Americans had the longest delay time, followed by Hispanics. Caucasians, Asian Americans, and Native Americans had shorter delay times.

- Employed persons (who are also younger) had longer delay times than did retired persons, homemakers, and disabled persons.

- Married persons had longer delay times than single, widowed, and divorced persons.

- Persons with private or military health insurance had longer delay times; those with Medicare and Medicaid and the self-insured had increasingly longer delays.

- Those with a history of MI had a less than 1-minute shorter delay time (not significant).

- The increase in patients presenting to the ED with 410 and 411 ICD codes was not statistically significant.

COMMUNITY RESOURCES FOR HEART ATTACK AWARENESS CAMPAIGNS [Dr. Finnegan]

Dr. Finnegan gave a brief overview of the REACT Web site, http://epihub.epi.umn.edu/REACT/welcome/html, whose purpose is to educate communities and health care professionals about what is involved in organizing a study like REACT (the site is not designed for the public). The site includes training, support, and practical advice; links to university research centers

and to the NHLBI; and a description of intervention strategies and materials. Specific features of the Web site include the following:

- Links from the main menu to information about intervention planning, the stages in developing a community intervention, and "Findings From the Field" (Powerpoint slides).

- Profiles of the REACT communities, including a summary of the issues, demographics, and data tools.

- A Professional Education section, including a sound file script for counseling patients, downloadable patient and health professional education packages, instructional guides, slides, and advice on how to reach different subgroups.

- Talk to the Experts, which allows users to e-mail REACT investigators, whose names are displayed by both area of expertise and geographic location.

- Mass media sources, including how to run a press conference.

Dr. Finnegan invited participants to visit the site and provide feedback. He noted that there is currently discussion about transferring all REACT materials to NHLBI's NHAAP.

ADJOURNMENT TO SUBCOMMITTEE MEETINGS [Ms. Hand]

Ms. Hand introduced Dr. Jane Zapka, co-principal investigator for the University of Massachusetts REACT site and chair of the working group that developed the provider education materials used in the study. Ms. Hand described the content of the remainder of the meeting and adjourned the meeting to the subcommittees. Because of the sequential schedule, she invited all participants to attend the three subcommittee meetings.

COORDINATING COMMITTEE MEETING: Part II
May 4, 1999

WELCOME AND INTRODUCTIONS [Dr. Claude Lenfant]

Dr. Lenfant, chairman of the Coordinating Committee, welcomed the Committee members and REACT investigators. He noted the retirement of Dr. Michael Horan, the Committee's liaison and director of NHLBI's Division of Heart and Vascular Diseases. He then introduced new Committee representatives, Mr. David Simmons of the National Black Nurses Association, Dr. Gerald DeVaughn of the Association of Black Cardiologists, Mr. Alexander Kuhn of the American Red Cross, and substitute representative Dr. Denise Hirsch of the American College of Chest Physicians (attending for Dr. Samuel Goldhaber). Dr. Lenfant regretfully informed the group of the sudden passing in December of Dr. Kenneth Dias, who represented the Association of Black Cardiologists.

AMERICAN HEART ASSOCIATION'S OPERATION HEARTBEAT [Ms. Patricia Hamilton]

Ms. Hamilton reported that the American Heart Association (AHA) has a new strategic goal: to reduce coronary heart disease (CHD) and stroke by 25 percent by 2008 by strengthening the Chain of Survival and acute care treatment. Specific programs are addressing cardiac arrest, stroke treatment, and AMI. Operation Heartbeat is intended primarily to address cardiac arrest but has implications for other acute events as well.

Operation Heartbeat will form local committees made up of volunteers from emergency cardiac care, advocacy, communications, community programs, and fund-raising groups. These committees will assess the local situation within each community in cooperation with EMS systems, emergency physicians, 9-1-1 system administrators, and others involved in the delivery of emergency care. The coalitions will be concerned with the following links:

- **Early Access.** Educating constituencies about the Chain of Survival, heart attack symptoms, and calling 9-1-1; ensuring that 9-1-1 systems are enhanced and available in rural areas; providing medical protocol training for dispatchers; looking at issues related to cellular phone technology for identifying caller location (at State and Federal levels); and other activities as needed locally.

- **Early CPR.** Increasing the availability of CPR training through community training centers and schools, educating the public about the importance and availability of CPR, marketing training to family members of high-risk patients, providing mass CPR training at nine sites on a national CPR day this fall, providing dispatcher-assisted CPR, and other activities as needed locally.

- **AED Issues.** Equipping all appropriate EMS vehicles and police programs with automated external defibrillators (AEDs), ensuring readily available AED training, establishing education programs for companies and organizations using AEDs, conducting restricted solicitations for AEDs as part of a package that also funds public education and training, supporting liability immunity legislation, and other activities as needed locally.

- **Early Advanced Care.** Funding advanced cardiac life support (ACLS) training and making it available through community training centers, promoting additional data collection capabilities, and other activities as needed locally.

Ms. Hamilton noted that, to date, Good Samaritan laws have been changed in 41 States to limit the liability of laypersons who use AEDs. The AHA wants to encourage safe and effective use of AEDs as part of an overall public access defibrillation (PAD) program, but it does not advocate the "fire extinguisher" model of AED use because of the lack of evidence showing that it is safe and effective. The AHA advocates a PAD program that has four elements: (1) training of designated rescuers in CPR and AED use, (2) medical oversight to ensure quality control and retraining, (3) integration with EMS, and (4) ensuring that devices are used and maintained according to the manufacturers' specifications.

AHA funds have been used to develop implementation materials and provide staff and training but not for the purchase of AEDs. In some local situations, grant proposals have been written to raise additional funds from individuals, corporations, and nonprofit organizations.

Operation Heartbeat will start July 1 and eventually will be implemented in 75 cities; during 2000, it is expected that it will be implemented in at least 55 cities where staff support is being made available. Other cities will implement at a lower level or piggyback activities to existing efforts. Ms. Hamilton expressed hope that committee members' organizations would work with the AHA to collaborate on activities at the local level.

EXECUTIVE COMMITTEE REPORT [Dr. James Atkins]

Dr. Atkins noted that the Executive Committee had met twice in person and twice by conference call since the last meeting. The members of the committee planned the current meeting and discussed future directions.

NHAAP DIRECTIONS FOR EDUCATING PATIENTS AND THE PUBLIC: PRELIMINARY RECOMMENDATIONS FROM THE PUBLIC EDUCATION ADVISORY GROUP [Ms. Mary Hand]

Ms. Hand summarized the initial recommendations of an ad hoc advisory group of selected Executive Committee members and Institute and contractor staff, convened immediately following the October 5–6, 1998, meetings of the NHAAP Coordinating Committee and subcommittees, to make recommendations to the NHAAP for educating patients and the public, in particular. The

recommendations were based on the preview of the REACT results that Dr. Finnegan, Dr. Luepker, and Dr. James Raczynski, Associate Professor, Department of Health Behavior, School of Public Health, University of Alabama at Birmingham, provided at the Coordinating Committee meeting last October. This preview was given before the REACT results were presented at the AHA meeting in November. The preliminary recommendations from the advisory group summarized below are presented here as part of the historical record. Ms. Hand emphasized that these are preliminary recommendations only.

What public/patient audiences should be addressed in a national public education effort?

The advisory group identified 20 audiences that should be targeted, of which the top 5 are as follows: (1) communities at risk, defined as those with a high percentage of low socioeconomic status population, a high percentage of elderly and minorities, a high rate of delay time in seeking care for heart attack symptoms, a high percentage of persons at risk for CVD, and a low rate of 9-1-1 and EMS use, (2) women, (3) minorities, (4) the elderly, and (5) patients with symptoms of a heart attack who were discharged from the ED or patients released from the hospital with a diagnosis of CVD.

The investigators recommended a two-pronged education effort that (1) identifies at-risk communities and provides them with technical assistance for community education efforts at the local level and (2) is aimed at women, minorities, the elderly, and discharged patients and their families.

Which REACT messages might be valid for a national publication effort? Which might need modification?

- Emphasize the 7-digit emergency number in addition to 9-1-1 (because not all areas of the country have 9-1-1).

- Explain the benefits of early care and early reperfusion and the advantages of accessing care from the EMS/ED.

- Emphasize the availability and benefits of artery-opening therapy.

- Place greater emphasis on the use of EMS versus other means of transport.

Specific recommended messages were as follows:

- Call fast, call 9-1-1. Make the right call for all emergencies.
- Break the conspiracy of silence. Talk about heart attacks.
- False alarms are OK.

What should the communication channels be?

- Targeted media (e.g., early morning gospel radio shows that reach elderly African Americans)
- Messages placed in the entertainment media
- Trusted key community groups
- Partnership with media—news, entertainment, Univision (the Spanish-language network)
- Use of lay community outreach workers
- The World Wide Web
- Outdoor ads (e.g., billboards)

What regional, State, and local strategies and settings are needed to complement the national education effort?

- Educational messages for chest pain patients who are released from the ED or who are in cardiac rehabilitation
- Storefronts and clinics in housing projects to reach the underserved population
- Hospital in-house television
- Emergency departments to reach patients who are released
- Congregate living facilities and other settings where seniors gather
- Worksites
- Community programs for women and minorities
- Traditional religious/social and civic groups in the community
- Neighborhood settings
- Collaboration with other CVD programs (e.g., those of the AHA, NHLBI, and Centers for Disease Control and Prevention [CDC])

Who are potential partners for public education?

- The National Highway Traffic Safety Administration's (NHTSA) "Make the Right Call" campaign (a collaboration involving the U.S. Fire Administration, American College of Emergency Physicians, American Red Cross, National Association of Emergency Medical Technicians, National Association of State EMS Directors, American Ambulance Association, and International Association of Fire Chiefs)

- The cell phone industry

- The American Hospital Association

- The American Association of Cardiovascular and Pulmonary Rehabilitation

- The Department of Housing and Urban Development

- The Health Care Financing Administration's (HCFA) peer review organizations (PROs)

- The pharmaceutical industry

- Established local coalitions

- The American Heart Association

- Other constituency groups for women, minorities, and the elderly

SUBCOMMITTEE REPORTS/PERSPECTIVES ON REACT

Dr. Lenfant introduced the reports from the three subcommittees.

Science Base [Dr. Joseph Ornato]

Dr. Ornato said that the remarkably shorter patient delay times compared with historical data from a decade ago confirm the value of education, but how the education was performed remains unclear. It is difficult to measure the added value of education in a relatively short-duration project, even one such as this that was conducted superbly and used state-of-the art materials. The subcommittee's conclusions are as follows:

- Even though the primary end point was not attained, the study documented a strong secular trend. An important secondary end point—increased utilization of EMS—was clearly affected, supporting the notion that the NHAAP should continue its public education effort.

- Although the subcommittee believes that the REACT educational materials should be disseminated broadly, the subcommittee members were not comfortable recommending a full-scale launch of an educational program with the REACT materials. The investigators should analyze their data further to help guide the subcommittee about where to go from here.

- The subcommittee was impressed by the three main reasons for patient delay—embarrassment, denial, and fear—and the need to ignite a dialogue between the physician/patient/family and the community at large. That ignition did not occur as a result of the REACT project, perhaps because the message was not strong or long enough, or perhaps because it was being disseminated so well in other venues that the incremental value of the study could not be shown.

- Education is an important solution, but not the *only* solution to the problem. Education will not affect individuals' embarrassment and fear of losing control when they call 9-1-1. Systemwide strategies, coupled with education, are needed. The subcommittee might play a role in analyzing EMS services, for example, by pilot-testing a different type of EMS service to a select community.

Education [Dr. Mark Johnson]

Dr. Johnson reported that the subcommittee identified the following messages for the public if the NHAAP were to move forward with a national education program:

- Call fast, call 9-1-1. Bring the hospital to you.

- Talk among yourselves. Discuss a plan for heart attacks to break the conspiracy of silence.

- If you think you are having a heart attack but are not sure, that is correct. Your doctor does not know either. That is why you need to get in to get tests.

Instead of conducting a massive public education program, NHAAP could do the following:

- Continue to broadly disseminate educational materials and act as a clearinghouse.

- Act as a technical assistance center for persons working with educational programs.

- Work with entertainment producers to get the message out about the notion of the "Hollywood" heart attack.

- Continue to review the REACT data as they are further analyzed to determine which parts may have worked best.

Dr. Johnson added that persons who delay may do so because waiting to see what happens is part of the normal way they solve problems.

Health Systems [Dr. Bruce MacLeod]

Dr. MacLeod reported that the subcommittee discussed how health systems affect individuals' response times when they have heart attack symptoms. The subcommittee arrived at the following conclusions:

- Reimbursement strategies clearly affect health care providers' behavior. Although managed care reimbursement strategies may be a potential barrier, this is a moving target because the strategies are continually changing.

- The systems could go in one of two directions: (1) bring more resources and services to the patient's bedside at home or (2) bring patients to a centralized area for quick and rapid evaluation.

INTERPRETATION AND DISCUSSION OF REACT RESULTS AND IMPLICATIONS FOR THE NHAAP [Dr. Russell Luepker]

Dr. Luepker noted that this is a juncture for both REACT and the NHAAP. (A copy of Dr. Luepker's slides for this presentation is provided in Attachment E.) The REACT data should be examined in more detail, but actions should be taken to nudge public health in the right direction. He made the following observations about general trends and REACT results:

- Delay time has fallen significantly, and a modest secular trend continues. There may be a lower limit to delay time, given the psychosocial factors that affect individuals who make the decisions.

- Reducing delay time to less than 1 hour would produce enormous benefits in terms of reducing sudden death and infarct size, but we do not currently know how to do this.

- There are limits to current educational interventions. Education is not occurring in high-risk patients with previous disease.

- In the REACT study, EMS/9-1-1 use improved significantly, and early reperfusion was enhanced. Reperfusion within 1 hour after arriving in the ED increased 2.5 times in patients discharged with a diagnosis of AMI. Only 25 to 35 percent of patients currently get reperfusion in a timely fashion. Patient delay is still a major reason, but in-hospital delay also occurs.

- In-hospital mortality declined dramatically over the last decade. The majority of deaths are out-of-hospital deaths.

Dr. Luepker made the following suggestions:

- A thoughtful national public education campaign is both warranted and imperative; the improved use of EMS demonstrated by the REACT study is justification enough. We cannot assume that the positive secular trend will continue; therefore, we need to maintain and enhance the positive aspects.

- Increased use of 9-1-1 and EMS alone is justification to do something nationally.

- Better strategies are needed to reach professionals and high-risk patients.

- A long-term education campaign is needed because a short-term campaign cannot compete in our media-rich environment.

LESSONS LEARNED FROM THE REACT COMMUNITY INTERVENTION
[Dr. John Finnegan]

Dr. Finnegan reviewed some of the lessons learned from the REACT study. (A copy of Dr. Finnegan's slides for this presentation are provided in Attachment F.)

- **There was a secular trend in improved patient delay time**. This varies by region and demographic groups. The trend is driven by the promotion of local hospital and chest pain treatment centers; national efforts by organizations such as the AHA, Stroke Foundation, NHTSA, and even the NHAAP; and media coverage.

- **Better messages are needed.** The chest pain message needs refining. Change the image of the "Hollywood" heart attack to include other symptoms such as shortness of breath. Include focused messages on women's risk of heart attack, the benefits of thrombolytic drugs and other reperfusion methods, and the benefits of EMS. Emphasize that EMS does more than take a patient to the hospital.

- **The health care system needs to do a better job**. Relatively few patients in the REACT study reported talking with health professionals before or after an event, but they felt good about being told by providers that they were right to call 9-1-1. Messages to health providers should exploit the team concept in health care delivery, opportunities for continued messages throughout the process of health care delivery, and the use of nonphysician allied health care providers to deliver messages.

- **People are not talking to each other.** They need to talk with their families, spouses, and health care providers about MI risk and appropriate actions to take if they have symptoms.

- **There is a need to reach more audiences.** Specific audiences that should be targeted include minorities, persons in low socioeconomic status groups, the elderly (especially those living alone), women, and persons with chronic conditions and comorbidities.

- **Use a variety of media to extend reach.** Combine public service announcements (PSAs) with paid ads to extend reach. Identify influential media channels to reach minorities, low-literate audiences, and the elderly. Use small media strategies to reach specific targets. Develop a media relations strategy. Form partnerships with media outlets to encourage them to adopt the project as a civic activity.

- **Assess health care systems.** Analyze health care systems for communication opportunities. Some managed care organizations (MCOs) resist the rapid care 9-1-1 message, and competition among health care organizations may affect community collaboration.

- **Community organization takes time.** Organizing the communities took longer than the 6 months permitted by the study design, especially where the health system was fragmented and competitive.

- **Conduct targeted public education.** Target specific high-risk subgroups. Use geographic information systems (GIS) to identify targets by geographic areas in terms of disease prevalence, EMS, and health care infrastructure.

- **Emphasize the EMS/9-1-1 message.** This message worked, especially with women. Determine how to get people to talk about the topic with others.

- **Consider a potential two-pronged model.** Consider a national media relations campaign that keeps the issue on the public agenda, coupled with a technical assistance model for local communities.

Comments From the Coordinating Committee

During the discussion of the presentations by Drs. Finnegan and Luepker, members of the Coordinating Committee made the following comments:

- The 18-month REACT observation period was too short to demonstrate a positive result. A sustained effort is needed.

- Increased ambulance use in the primary population was the major finding of the study even though it was a secondary outcome. Picking delay time as the primary end point seemed reasonable, but the investigators might select additional end points of public health importance if they had it to do over again.

- Technical assistance needs to be tailored to each particular health services arena in a systems change approach.

- The data must be evaluated by a peer review process. Dr. Luepker is comfortable with the quality and interpretation of the EMS data but agreed that they should be analyzed further.

- Both positive and negative results of the REACT study should be disseminated.

- Informatics innovations are needed.

- A committee is needed to coordinate similar activities, such as those of the NHAAP and AHA. This might include information sharing, linking Web sites, and use of system improvement models.

- Members who have ideas for further analysis should contact Dr. Simons-Morton.

FINAL PERSPECTIVES ON IMPLICATIONS FROM REACT [Dr. Atkins]

Dr. James Atkins, Chair of the Executive Committee, provided a wrap-up in which he emphasized that significant improvements in reducing delay time have occurred, though we do not know how this has been achieved. The median delay for the entire study was just over 2 hours, better than any previous studies. Improvements occurred among African Americans, the elderly, and homemakers and also among those persons who waited the longest. Use of EMS allows more patients to get to the hospital in time to benefit from thrombolytic therapy.

A negative finding was that patients were not talking to their family or health care workers. A new system may be needed to disseminate information (e.g., sending it with billing material from HCFA). Dr. Atkins suggested aiming public campaigns at the bystander instead of the patient, looking at system change, and addressing individuals' main reasons for not calling 9-1-1—embarrassment, denial, fear—which may require changing the nature of the EMS response.

Dr. Atkins indicated that the Executive Committee will hold a conference call in a month or so to determine its future directions, and he challenged committee members to provide innovative ideas for future campaigns. He noted that the issues discussed today would be possibly considered for the agenda of the cardiovascular disease trends conference to be held September 27–29, 1999, in Bethesda, Maryland. This meeting will be broadcast on the World Wide Web.

REPORTS FROM ORGANIZATIONS

Dr. Jeffrey Michael of NHTSA reported on a proposal for a new system to educate EMS providers that will include national testing, accreditation of paramedic and EMT programs, and the development of national voluntary standards. The proposal, developed by a steering committee, was presented a week ago at a national conference. The steering committee is seeking national input on this proposal. Dr. Michael asked for feedback on how the NHAAP might use the system to meet its own goals.

Dr. Michael also reported that a national conference on wireless emergency access will be cosponsored by the National Emergency Number Association on May 21, 1999, in Alexandria, Virginia. About one-third of 9-1-1 calls are made on cellular phones, which cannot be located. A solution would require a new consistent nationwide system with coordination among nontraditional partners. A related issue is automatic collision notification, which involves wireless emergency access when airbags deploy. NHAAP Coordinating Committee members are invited to attend the meeting.

Dr. Robert Christenson reported that the American Association for Clinical Chemistry and the International Federation of Clinical Chemistry Societies are establishing guidelines for clinical laboratory testing of patients with acute coronary syndromes. One issue is the nature of troponin release and when the use of these markers is appropriate.

Dr. Atkins reported that the American College of Cardiology (ACC) will host a Bethesda conference on emergency cardiac care on September 13–14, 1999. This is a consensus conference that is used to develop guidelines when the evidence base is lacking.

Ms. Hand acknowledged the work of Dr. Christine Crumlish who spearheaded two publications on patient delay in two nursing publications, *MedSurg Nursing* and the *American Journal of Nursing*.

Ms. Hand referred Committee members to Dr. Christopher Cannon's report (included in the meeting packet) of the American College of Chest Physicians' activities, in which he highlighted the Web site, chestpainonline.org, which contains articles and other information on acute coronary syndromes.

Dr. Robert McNutt reported that Ohio citizens will have access to Netwellness, a Web site that includes an Ask-the-Doctor component and numerous topics including rapid care for coronary heart disease. He suggested that there may be many similar resources that could be coordinated.

Mr. Jay Merchant reported that HCFA is raising awareness of Y2K compliance. Providers not yet Y2K compliant should be in touch with their intermediaries, carriers, or regional HCFA offices. He asked members to take this information to their organizations.

Mr. Arthur Ciarkowski reported that the Department of Defense (DoD) is developing high-technology combat care that may be applicable to the NHAAP. It has developed a litter equipped with defibrillators, ventilators, anesthesia, and telemedicine.

Ms. Hand said that members will receive a printed version of the proceedings of the Information Technology Symposium, which was held in April 1998. She noted that the Committee members had been given a draft of the proceedings with their meeting materials. She reminded members to send relevant information, comments, and questions to the NHAAP listserv.

PROGRAM NOTES [Ms. Hand]

Update on the Healthy People 2010 Objectives

Ms. Hand discussed the current Healthy People 2010 objectives related to the NHAAP and how they have changed since being presented at the last meeting. Quantitative targets have been deleted because the Office of Disease Prevention and Health Promotion (ODPHP) has determined that there can be no quantitative objectives for developmental objectives (those without baseline data sources). Ms. Hand welcomed ideas about data sources to track the objectives. Healthy People 2010 will be finalized June 21, 1999, and released in January 2000.

Plans for the Next Meeting

Ms. Hand noted that the full subcommittees will hold conference calls before the next meeting. The date of the next meeting will be changed because the AHA plans to update its emergency cardiac care guidelines on February 5–9, 2000. Two alternative dates in February 2000 will be researched. [NB: The new meeting dates are February 28–29, 2000.]

ADJOURNMENT [Ms. Hand]

Ms. Hand adjourned the meeting.

National Heart Attack Alert Program

Science Base Subcommittee Meeting

May 3–4, 1999
Reston, Virginia

SCIENCE BASE SUBCOMMITTEE MEETING

Meeting Summary
May 3, 1999

Participants

Joseph P. Ornato, F.A.C.C., F.A.C.E.P., M.D. (Chair)
Robert J. Zalenski, M.D. (Vice Chair)
Robert H. Christenson, Ph.D.
Arthur A. Ciarkowski, M.S.E., M.B.A., M.P.A.
Charles Curry, M.D.
Denise Hirsch, M.D.
Costas T. Lambrew, M.D.
Bruce A. MacLeod, M.D., F.A.C.E.P.
Robert A. McNutt, M.D.
Harry P. Selker, M.D., M.S.P.H.
Mark S. Smith, M.D.
Pamela Steele, M.D., M.P.H.
Daniel Stryer, M.D.

REACT Investigators

John Finnegan, Ph.D.
Russell Luepker, M.D., M.S.

Other Coordinating Committee Members (Observers)

James M. Atkins, M.D., F.A.C.C.
Gerald DeVaughn, M.D., F.A.C.C.
Alexander R. Kuhn, M.P.H., NREMT-P
David E. Simmons, Jr., M.S.N., R.N.

NHLBI Staff

Lawton S. Cooper, M.D., M.P.H.
Mary M. Hand, M.S.P.H., R.N.
Denise G. Simons-Morton, M.D., Ph.D.

Contract Staff (Prospect Associates)

Judith Estrin, M.A.
Elaine Murray
Linda Weinberg, R.D.

WELCOME AND INTRODUCTIONS [Dr. Joseph P. Ornato]

Dr. Ornato welcomed the REACT investigators and other participants and asked them to introduce themselves. He said that the session would be devoted to trying to understand the REACT findings and get direction about where to go from here.

DISCUSSION WITH REACT INVESTIGATORS [Subcommittee]

Dr. Ornato began the session by asking: If you had it do over again, what lessons were learned?

Dr. Luepker said that when the investigators developed the delay time hypothesis, they did not expect delay time to be 2 hours, 21 minutes at baseline; to reach their goal would have required

reducing the delay time to 1 hour, 40 minutes. Earlier studies had started with much longer delay times. Although he acknowledged that the study did not do as well as was hoped, he said it did result in increases in 9-1-1 calls and in getting patients to the ED (though most were discharged).

Lessons learned included the following:

- A more sustained or more intense program was needed, especially in the current media-intensive environment.

- Health professionals are not doing a very good job of educating their patients. In particular, they need to do a better job of communicating with persons at high risk.

- A public campaign is needed to reach individuals who have not had a prior MI. Messages need to be tailored more.

- During the discussion, subcommittee members raised the following issues:

- The secular trend—information from a number of sources—had reduced the delay time substantially before the study began.

- The REACT study did not ignite interpersonal communication. (Marketers use a diffusion curve to examine the effect of the media in igniting such communication.)

- The messages reached persons who were too young to consider themselves vulnerable to a heart attack.

- The 9-1-1 message was the most sustained and prominent message. It was clear and direct, unlike the message asking people to self-evaluate their symptoms.

- The increase in 9-1-1 calls and EMS use occurred in only 1 percent of the population—the primary population (patients who came to the ED with chest pain and received a CHD-related ICD code).

- Persons calling 9-1-1 were more likely to be admitted as MI, but the increase in 9-1-1 calls did not result in improved outcomes. Perhaps a new paradigm of system delivery is needed.

- Cost is not a major reason for not calling 9-1-1; major reasons are embarrassment, denial, and fear of being wrong.

- Public education may not work because there are too many conflicting messages and the health system is so complex. A different approach may be the development and use of new technologies for early diagnosis at home.

- Health education works; don't give up on it. By giving up on public education, you give up the ability to put heart attack on the national agenda.

- We do not know how to train health care providers to communicate with patients. This must be made a higher priority—to talk about this unthinkable issue using media and interpersonal strategies.

- Being in the ED may not be a "learning moment." Patients may not hear the messages during this stressful time. Many doctors may not want to frighten patients by discussing the "unthinkable."

- Being discharged from the ED does not mean the patient does not have a cardiac condition. In some cases, patients are sent home with medication and scheduled for further tests. In other cases, a mistaken diagnosis is made. Studies have indicated that a large percentage of discharged patients who entered the ED with MI symptoms eventually had a heart attack.

- About 2 percent of people with a heart attack are sent home; this is four times more common among African Americans and is also more common among premenopausal women and persons with atypical symptoms.

- Hospitals appear to have different practices in admitting patients with chest pain. Are the clients different, or are the hospital thresholds different?

- The REACT questionnaire was not racially sensitive.

- In some cities, calling an ambulance will not get you to the ED quicker. But EMS is not mere transportation—it offers access to life-saving treatments.

- The REACT study provided no data regarding the following information:

  - Diagnoses of patients who were discharged and later readmitted.
  - Patients' use of aspirin before presenting at the ED.
  - The number of persons who had been to the ED before.
  - The time from decision to seek care to arrival in the ED.

- Also not known is whether the intervention did not work or whether it was not intense (or long) enough.

Participants made the following suggestions:

- Enable people by giving them an action plan.

- Use a combined intervention that educates the public to use the ambulance, coupled with reperfusion in the ambulance. EMTs could deliver the message about the importance of calling the ambulance.

- Change the public's perceptions about risk. Six of ten women think breast cancer is a bigger risk than heart disease. The public thinks that heart attacks can be "fixed."

- Give patients written instructions. Get the message across by giving specific examples, such as "You will reduce your risk of dying by xx percent."

- Make the message relevant. Teaching heart attack symptoms in school would not be relevant to youth. (However, CPR training for teenagers may be an opportunity to provide the bystander message.)

OTHER SUBCOMMITTEE BUSINESS [Mary Hand]

Updates on Papers

Chest Pain Centers Position Paper

Ms. Hand reported that almost all reviewers had provided comments on this paper. The two co-chairs will review the comments and proceed with the revision. The participants raised several issues: concern about the name "chest pain centers" because of the need to educate the public about the broader symptoms of a heart attack; concern that some of the statements in the paper are not evidence based; and the possible need for broader endorsement of the paper. Dr. Mark Smith summarized comments he received from the American College of Emergency Physicians.

Critical Pathways for Acute Coronary Syndromes

Ms. Hand said there has been no activity on this paper since the last meeting. There is a good first draft that will not take much more work.

Emergency Department Technologies Evidence Report

An updated evidence report is in progress and should be completed within 6 months. The report is being developed by the Agency for Health Care Policy and Research's Evidence-based Practice Center at the New England Medical Center.

Acute Myocardial Infarction Symptom Message [Dr. Ornato]

The REACT investigators decided to adopt the classic AHA message about symptoms, which strongly emphasizes chest pain and shortness of breath (the primary presenting symptoms) but also includes other symptoms. Dr. Ornato asked the subcommittee how the symptom message should be changed if the NHAAP adapts it. One possibility is to improve symptom recognition among the outlier groups—women, African Americans, and the elderly. The subcommittee agreed that more time is needed to consider this issue and to see the primary data. Ms. Hand will talk to Dr. Simons-Morton about accessing the data.

Ms. Hand noted that the NHAAP is negotiating with the investigators to have them release the copyright for the REACT materials to the NHLBI so that the materials can be adapted for national dissemination. Members felt that the materials should be in the public domain.

Need for NHAAP Statement on Use of Aspirin [Dr. Ornato]

The subcommittee discussed whether it should take a position on use of aspirin in response to possible acute cardiac symptoms. Aspirin is being used widely. The public is hearing the aspirin message from Bayer, and various groups support its use (e.g., AHA, HCFA, the American Geriatrics Society). Although there is no doubt about the usefulness of aspirin in AMI, questions remain such as the time-dependency issue and the appropriate dose.

The subcommittee agreed that it should analyze old data, review new data (including recent data on time dependency), and track down the position of the American College of Cardiology (ACC). One member asked whether it is the subcommittee's role to keep up with all interventions. On the other hand, taking a stand on aspirin use could help clear up the confusing message for physicians.

ADJOURNMENT

Dr. Ornato adjourned the official part of the meeting but said that members would continue their discussion about the REACT results on an informal basis.

National Heart Attack Alert Program

Education Subcommittee Meeting

May 3–4, 1999
Reston, Virginia

EDUCATION SUBCOMMITTEE MEETING

Meeting Summary
May 3, 1999

Participants

Mark B. Johnson, M.D., M.P.H. (Chair)
Christine M. Crumlish, Ph.D., R.N. (Vice Chair)
Angelo A. Alonzo, Ph.D.
James M. Atkins, M.D., F.A.C.C.
Julie Bracken, R.N., M.S., C.E.N.
Allan Braslow, Ph.D.
M. Ray Holt, Pharm.D.
Kathleen G. Keenan, R.N., M.S., C.C.R.N.
Roger B. Rodrigue, M.D., M.P.H.
Hannah Y. Ruggiero, R.N., COHN-S

REACT Investigators

John Finnegan, Ph.D.
Russell Luepker, M.D., M.S.
Jane Zapka, Sc.D.

Other Coordinating Committee Members (Observers)

Gerald DeVaughn, M.D., F.A.C.C.
Lawrence D. Jones, M.D.
Alexander R. Kuhn, M.P.H., NREMT-P
David E. Simmons, Jr., M.S.N., R.N.

NHLBI Staff

Mary M. Hand, M.S.P.H., R.N.
Denise G. Simons-Morton, M.D., Ph.D.

Contract Staff (Prospect Associates)

Judith Estrin, M.A.
Elaine Murray
Linda Weinberg, R.D.

WELCOME AND INTRODUCTIONS [Dr. Mark Johnson]

Dr. Johnson welcomed the group and asked them to introduce themselves.

DISCUSSION WITH REACT INVESTIGATORS [Subcommittee]

Dr. Johnson asked the investigators the following questions, which elicited the following responses:

What audiences should a national public education effort target?

- Employ a national campaign model and a technical assistance model for local communities, such as is described on the REACT Web site.

- Target community leaders to keep the issue before the public.

- Target subgroups that are more difficult to reach and have longer delay times—women, low-literacy groups, minorities, and the elderly. (REACT study efforts to reach specific audiences included mailing low-literacy materials to households with low incomes and mailing a 15-minute videotape to 60,000 elderly.)

- Target the message to high-risk persons, but also target the general public to reach spouses, family members, and other bystanders. One less threatening strategy to reach those at high risk might be to target them as bystanders.

- Consider comorbidity as a way to engage high-risk persons. Patients with risk factors did not perceive themselves at risk for a heart attack, based on REACT research.

- Develop specific messages for high-risk persons.

- Provide a sustained, integrated intervention for health providers.

- The majority of heart attacks happen at home.

What other organizations should be involved?

- Hospitals and health care organizations.

- The AHA. This organization is launching its own program in this area (Operation Heartbeat) with pharmaceutical industry support.

- Organizations such as the American Red Cross and AHA will buy into a program that generates revenue (e.g., CPR training).

- Health departments. The Centers for Disease Control and Prevention (CDC) has a network with these groups.

- The entertainment industry at the national level. The NHAAP should try to influence producers to include messages in movies and popular television shows.

- OPEC should provide a central clearinghouse for mass media and production because resources may not be available at the local level.

What messages would work best nationally?

- The "Call 9-1-1" message was the most consistent one. Related messages are "Bring the hospital to you," "Call 9-1-1 even if you're not sure," and "You can't diagnose your symptoms yourself."

- The message should dispel the image of the "Hollywood" heart attack.

- The bystander message was used during one-quarter of the campaign. It should not be the sole message, but it will be heard by at-risk persons as well, in a nonthreatening manner.

- Without a national agenda, the subject is out of sight, out of mind. Need to focus attention on this problem and build an agenda. A sustained effort is needed.

- It is like CPR education in that you educate "just in case."

Other Investigator Comments About the REACT Study

- The primary end point did not change, but this may be explained by the fact that the median delay time was surprisingly low at the start of the study. This indicated that secular change took place; a goal now would be to accelerate the change.

- The study had some positive effects. For example, women who ended up having heart attacks called 9-1-1; ED visits increased 20 to 25 percent. (False positives were not a problem.)

- REACT did not ignite interpersonal communication between health providers and patients.

- By the time REACT began, secular changes in delay time had occurred.

- National media were not used in order to avoid having messages overlap between intervention and control communities.

- There is no reason not to apply the program to large cities. The situation would be more complex and would take more effort, but it is not impossible.

- Local staff costs per REACT site were about $40,000 per year.

- Several of the REACT communities are continuing the intervention, some more enthusiastically than others. Efforts were made to turn it over to the local AHA.

- Persons who had a previous MI indicated that symptoms were different the second time, and they did not come in any sooner. The 18-month period was not long enough to follow patients to a second event.

- The questionnaire asked patients what their actions were. These data can be examined to determine whether patients called their physicians first.

- The 9-1-1 message created a norm that makes it harder for insurance companies and physicians to not buy into the concept. The NHAAP should make efforts to get payers to cover case management. Some HMOs were big supporters of patient education.

- Patients do not absorb information given to them during the acute phase of their illness. Only a minority of patients undergo cardiac rehabilitation, when the messages could have more impact.

- The intervention can be delivered by nonphysicians, such as health educators. The physician's role could be to give a referral. In general, the role of the cardiologist has changed; primary care physicians have a bigger role.

- Diffusion of the norm about calling 9-1-1 for symptoms is important. However, there are perceptual issues about calling 9-1-1. Latinos, for example, equate 9-1-1 with the police, and African Americans associate calling 9-1-1 with being transported to a hospital with a lower standard of care.

- The REACT Web site's Professional Education Section includes suggestions about training health care workers.

Comments From Meeting Participants

- When they experience symptoms, patients are unsure about their significance. They should not necessarily be viewed as denying their symptoms as much as problem-solving with respect to their symptoms. Thus, for many people, waiting is a coping strategy.

- The REACT study may have targeted the wrong groups. The mean age in the phone survey was 42, but the MI population is in their 60s.

- The NHAAP could work with the National Diabetes Education Program, which focuses on different comorbidities, including heart disease.

- A national program needs to segment the audience to concentrate on persons who are closer to adopting a behavior. (Dr. Finnegan responded that focus group reports, which are on the REACT Web site, address this issue.)

- There is no advocacy network for heart disease, unlike the strong advocacy network for breast cancer that has put this issue on the front burner. However, asking women to get a

mammogram is simple and direct, whereas asking them to store information about a heart attack is more difficult and complex.

- The Department of Defense has an office that works with the movie industry; perhaps NHLBI could have something similar.

OTHER BUSINESS [Dr. Mark Johnson; Ms. Hand]

REACT Educational Materials

Ms. Hand reported that the NHAAP is talking with investigators about taking over the print and electronic materials, which would require that the investigators surrender the copyright. For national dissemination, the word "REACT" would be removed and the messages might be adjusted. If this occurs, the effort would be prioritized.

Status of Journal Articles

Ms. Hand thanked Dr. Crumlish for writing the article published in the April issue of *MedSurg Nursing*, "Reducing Patient Delay in Seeking Treatment for Acute Myocardial Infarction." The article was associated with a continuing education program. Dr. Crumlish also co-authored a paper accepted for publication in the *American Journal of Nursing*.

A letter from Dr. Atkins invited Ms. Hand with Dr. Rodrigue and several others to prepare some chapters for *Family Practice Recertification*. Dr. Atkins explained that this journal goes to all certified family practitioners and includes articles as well as review questions for recertification examinations. A special fall issue will include risk factors, delay time, ECG diagnosis, other tests, and cardiac rehabilitation.

Other Activities

Ms. Hand noted that two articles previously requested by the subcommittee are in the Coordinating Committee packets: (1) a publication from the National Kidney Foundation about cardiovascular disease (CVD) in persons with kidney disease and (2) an article on CVD in diabetics.

Dr. Atkins reported that the AHA is starting an early event campaign with three targets: cardiac arrest, AMI, and stroke. This intervention program will be conducted in 125 markets. AHA plans to survey each market for the biggest problem and then develop a public education campaign appropriate for each community.

Dr. Atkins also reported that the American College of Cardiology (ACC) will hold a conference on emergency cardiac care on September 13 and 14, 1999, in Bethesda, Maryland. This is a

consensus conference used by the ACC to develop guidelines when there is not a sufficient science base. When a strong evidence base exists, ACC convenes a task force to write a guidelines document.

AGENDA ITEMS FOR THE NEXT SUBCOMMITTEE MEETING

Ms. Hand asked the members for ideas for the next meeting and noted that a conference call would be held to solicit ideas. The group agreed that it would prefer to wait until tomorrow's discussion to address this.

ADJOURNMENT

Dr. Johnson thanked the members and staff and adjourned the meeting.

National Heart Attack Alert Program

Health Systems Subcommittee Meeting

May 3–4, 1999
Reston, Virginia

HEALTH SYSTEMS SUBCOMMITTEE MEETING

Meeting Summary
May 3, 1999

Participants

Bruce A. MacLeod, M.D., F.A.C.E.P. (Chair)
William J. Schneiderman (Vice Chair)
Wayne H. Giles, M.D., M.S.
Lawrence D. Jones, M.D.
Jeffrey Michael, Ed.D.
Jimm Murray

REACT Investigators

John Finnegan, Ph.D.
Russell Luepker, M.D., M.S.
Jane Zapka, Sc.D.

Other Coordinating Committee Members (Observers)

James M. Atkins, M.D., F.A.C.C.
Allan Braslow, Ph.D.
Gerald DeVaughn, M.D., F.A.C.C.
David E. Simmons, Jr., M.S.N., R.N.

NHLBI Staff

Mary M. Hand, M.S.P.H., R.N.
Denise G. Simons-Morton, M.D., Ph.D.

Contractor Staff (Prospect Associates)

Judith Estrin, M.A.
Elaine Murray

WELCOME AND INTRODUCTIONS [Dr. Bruce MacLeod]

Dr. MacLeod welcomed the subcommittee and reviewed its charge.

DISCUSSION WITH REACT INVESTIGATORS [Subcommittee]

The group discussed how information from the REACT study could help the subcommittee set an agenda. Dr. MacLeod noted that the subcommittee has been concerned in the past with identifying various barriers to care, including factors associated with access to EMS and 9-1-1 services and payment for EMS.

EMS Services

It was noted that about 85 percent of 9-1-1 calls are for police, 10 percent are for EMS, and 5 percent are for fire departments. The discussion raised the following points:

- Dr. Lawrence Jones suspected that cost is a factor in accessing EMS. Most fire departments charge 20 percent more than the allowance specified by HCFA. Hospital-dispensed services are billed at the same rate. Private services charge more, but reimbursement is declining and some are pulling out of this market. There is no consensus on whether EMS is a service like police and fire, and, therefore, on the public tax roll, or a health service paid for by preferred provider organizations (PPOs) and HCFA.

- Until recently, there was no national policy for reimbursement for EMS use. Mr. Jimm Murray said that HCFA has tried to standardize fees. Congress has mandated that $2.4 billion be used to reimburse ambulance services, effective January 2000 (but this will probably be delayed).

- One suggestion was to look at data from the REACT patient surveys to determine whether patients who were instructed to contact their physician before calling 9-1-1 had poorer outcomes.

Managed Care

Dr. MacLeod asked whether REACT collected any data on managed care's effect on EMS. The investigators made the following points:

- The uninsured had longer delay times (but that might be because they were younger).

- Cost was ranked low as a barrier, but it is a consideration.

- One HMO in Massachusetts wanted its members to call a triage nurse before calling 9-1-1. Although this may be a policy to save money, MCOs cannot be lumped together. It is a marketplace issue: if most MCOs pay for EMS, others will do so.

- The study yielded false positives and false negatives when people were asked whether their MCO covered EMS. Their perception of coverage is what is important.

- There have been a number of successful lawsuits against MCOs when people died after being denied quick access. Laws are being passed with language such as "If a prudent layperson thinks he/she has severe symptoms and calls 9-1-1, the insurer has to pay."

- A general problem in health services research is lack of validation of what is and is not covered by MCOs. About one-third of people change plans each year, and each insurer may have multiple plans. The structure of health care is changing rapidly.

Health Providers' Perceptions

The group discussed issues related to provider counseling of patients, about recognition and response to heart attack symptoms, with reference to the REACT research program.

- Low rates of counseling are related to insurance coverage, short hospital stays, and physician attitudes, as well as patients' low retention of information.

- Some physicians do not want to increase access too much because they think individuals will misuse the system. However, they acknowledge that "frequent fliers" are few in number.

- The changing role of the cardiologist and the low use of cardiac rehabilitation are other factors.

Suggestions to Enhance Provider-Patient Communication

The subcommittee then considered ways in which heart attack messages could be incorporated into provider-patient interactions:

- Repeat the message in multiple forms through verbal discussions, videos, and written instructions. Acknowledge patients' different learning styles. Determine the best times to present messages. Provide consistent messages.

- Spend more time and effort to provide patients with a plan of action, and encourage health care providers to communicate with patients before they leave the hospital.

- Train nonphysician allied health care providers to counsel patients.

- Encourage policy changes at the organizational and regulatory level.

- Recognize that a team approach in health care is becoming more acceptable. For example, everyone in the hospital plays a role in smoking cessation.

Discussion of Best Practices

Dr. MacLeod noted that one of the subcommittee's other initiatives has been to create a template that communities can use to develop a system for acute coronary care. He asked whether REACT had uncovered the best practices that the subcommittee could use. Mr. Schneiderman added that the subcommittee had developed a paper to identify an ideal system and suggested measuring REACT findings against this paper. He asked the investigators to prepare a list of findings with systemic implications.

The investigators responded that REACT was designed to test an educational intervention, not to change the health care system or to improve quality of care. The study revealed truths, but they are community specific. While the findings might not be statistically significant, the investigators extrapolated and came up with the following ideas for system changes:

- The system should reimburse physicians for counseling. The finding that diabetic hypertensives received no more counseling than patients without this chronic condition clearly indicates that there should be a standard of practice that specifies the content of the education these patients must receive. There should be guidelines for what health providers say and when. Medical records could be formalized to provide reminders.

- Physicians could refer patients to someone else trained to do counseling. Health educators could provide information to patients in the waiting room. Nurses could conduct followup management by phone. (Similar recommendations are in the Provider Education section of the REACT Web site.)

- In the areas of diabetes and hypertension, efforts have been made to educate providers to attend to current guidelines. This involves providing feedback to physicians, the use of computerized data, and reminders for physicians and nurses.

- The best examples of case management occur around high-cost, high-volume diseases such as allergy, diabetes, and arthritis. Some MCOs have selected a disease or two a year for case management strategies. They have not yet selected AMI, possibly because it involves multiple risk factors and costs may not be recouped quickly. The NHAAP needs to advocate for this, because the MCOs will not do it on their own.

- More research is needed on the effect of case management systems on reducing hospitalizations and costs.

- A major barrier to calling 9-1-1 is that the response (often involving ambulance, fire truck, police) calls attention to itself. Alternatives are telemedicine for an initial diagnosis or a "quieter" response (e.g., a "stealth" ambulance without sirens and lights, as was used in Sweden).

In general, the investigators felt that the health care system did not pose a major barrier to persons getting care, though better collaborations and communication are possible. REACT succeeded in bringing together enthusiastic coalitions to educate the public, patients, and providers, and no participants pulled out of the study. The Web site has templates about building coalitions.

PERFORMANCE MEASURES FOR EMERGENT CARDIOVASCULAR CONDITIONS: UPDATE ON COMMUNICATIONS WITH STANDARD-SETTING ORGANIZATIONS [Dr. MacLeod]

Dr. MacLeod turned to the status of work with other organizations to develop quality measures for health care systems/providers for managing patients with potential acute coronary syndromes. He asked how the subcommittee can influence the regulatory process and what it could take from the work of other organizations.

Ms. Hand referred to an e-mail from Mr. Joshua Seidman of the National Committee for Quality Assurance (NCQA), which is awaiting direction from its Committee on Performance Measurement (CPM). Issues include whether HEDIS should be evaluating hospital-level care and whether a new HEDIS measure can depend exclusively on medical records. Ms. Hand will talk to Dr. Joanne Wilkinson and Mr. Seidman to see what greater role the subcommittee can play.

Ms. Hand also contacted Ms. Margaret VanAmringe of the Joint Commission on Accreditation of Health Care Organizations and expects to get some helpful suggestions from her.

Dr. MacLeod referred to a letter from Dr. Dale Berwyn of HCFA asking for comments on issues related to performance indicators for the Acute Myocardial Infarction Project (previously the Cooperative Cardiovascular Project). Similar letters went to all persons attending the Cooperative Cardiovascular Project conference in December 1997. Dr. MacLeod will ask for input from the Science Base Subcommittee. Ms. Hand suggested inviting Dr. Berwyn to the next meeting to discuss how the NHAAP and HCFA can dovetail efforts. It was noted that HCFA has used the ACC, AHA, and peer review organizations (PROs) to advise on performance indicators. HCFA has baseline data for the period from April 1998 to March 1999, and Dr. MacLeod expects that it plans to measure Medicare delivery after 3 years.

Dr. Giles discussed the material distributed on FACCT—The Foundation for Accountability. This organization has developed and validated a survey instrument to assess health provider accountability for cardiovascular disease. This instrument has not been used yet. Ms. Hand and Dr. Giles will try to develop a question around the counseling issue.

Dr. MacLeod called attention to other organizations for potential collaboration: the American Medical Association Accreditation Program, the National Fire Protection Association, Tricare (the military's managed care system), the American College of Health Care Administrators, and the American Board of Medical Specialties. He asked for other suggestions.

ADJOURNMENT [Dr. MacLeod]

Dr. MacLeod adjourned the meeting.

National Heart Attack Alert Program

Executive Committee Meeting

May 3–4, 1999
Reston, Virginia

EXECUTIVE COMMITTEE MEETING

Meeting Summary
May 4, 1999

Participants

James M. Atkins, M.D., F.A.C.C. (Chair)
Christine M. Crumlish, Ph.D., R.N.
Charles Curry, M.D.
Mark B. Johnson, M.D., M.P.H.
Bruce A. MacLeod, M.D., F.A.C.E.P.
Joseph P. Ornato, M.D., F.A.C.C., F.A.C.E.P.
Roger B. Rodrigue, M.D., M.P.H.
William J. Schneiderman
Robert J. Zalenski, M.D., M.A.

NHLBI Staff

Claude Lenfant, M.D.
Mary M. Hand, M.S.P.H., R.N.

Contract Staff (Prospect Associates)

Judith Estrin, M.A.
Elaine Murray

WELCOME AND INTRODUCTIONS [Dr. James Atkins]

Dr. Atkins welcomed the participants.

REPORTS FROM SUBCOMMITTEES ABOUT REACT: DISCUSSIONS AND OTHER SUBCOMMITTEE BUSINESS

Science Base Subcommittee [Dr. Joseph Ornato]

Dr. Ornato said that the disappointing result from the REACT study of no reduction in delay time in the intervention community indicates that the problem is complex and that it will take more than education alone to reduce the time that persons experiencing chest pain delay before calling 9-1-1. He made the following points:

- It is clear that the study was impeccable and that the REACT materials were excellent. The materials should be made more widely available if this does not involve a significant expense.

- At this time, further investigation of the educational messages does not appear to be warranted, and it would not be prudent to proceed with a large, expensive public education campaign. However, specific messages might be designed to target the three subsets of patients with longer delay times: minorities, the elderly, and women.

- There is a need to better understand the details of the REACT data.

- The REACT investigators suggested several possible reasons to explain why the study did not make a difference in delay times:

  - The secular trend—the incremental effect of public information from other sources, such as advertising, media campaigns, and news coverage—had already reduced the delay time.

  - The ignition point at which individuals communicate with each other about the issue did not occur.

  - The message was not strong enough or sustained over a long enough period.

During the discussion, participants reiterated some of these points and made some additional observations:

- The study was not a failure; it provided valuable information. Although there is no evidence to warrant accelerating the education effort, it could be upgraded using REACT materials.

- The results do not prove that education is unimportant; there were significant improvements over the last decade.

- The rate of knowledge increase was measurable but affected only a small percentage of the population. The information may have reached the wrong audience—younger persons who were not at risk.

- Efforts should target the important high-risk groups and subgroups. Resources in the community that are already addressing these groups could be utilized (e.g., AARP, leaders in minority communities).

- Alternate approaches may be needed, perhaps using new technologies. A brainstorming session at the next meeting could help identify possible approaches.

Education Subcommittee [Dr. Mark Johnson]

Dr. Johnson identified three messages for the public that might be used in a public national education campaign:

1. Bring the hospital to you—Call 9-1-1.

2. Talk with your family about a plan for action if symptoms develop.

3. You might delay calling 9-1-1 because you don't know what the symptoms mean, but neither does your doctor. That's why you need tests.

Dr. Johnson also made the following suggestions for the committee:

- Work with movie and television producers to encourage them to include story lines with a realistic view of a heart attack to counter the perception caused by "Hollywood" heart attacks.

- Provide technical assistance to groups working with the three outlier target groups and to the communities that want to continue with the education effort.

During the discussion, participants made the following points:

- The responses of physicians interviewed during the study indicate that efforts must be made to educate them about the need to communicate with their patients.

- Physicians who see their role as reassuring patients may shy away from bringing up the subject of heart attack symptoms.

- Physicians will not do counseling if they are not reimbursed for it. The health care system needs to be changed to allow billing for more than procedures. Counseling codes were designed for this purpose, but HCFA never fully activated them.

- Health care providers other than doctors can discuss heart attack symptoms with patients. Most high-risk patients have multiple health care visits each year, so there are opportunities for communication.

- Because counseling will not help the large number of cardiac arrest patients who never see a physician, public education is still needed.

- The top three reasons for delay among patients are embarrassment, denial, and fear. Lack of knowledge and cost are not important reasons.

- The decision to call 9-1-1 is a major one; people are afraid of losing control.

- Asking people to call 9-1-1 is asking them to change their normal problem-solving mode, which is to wait to see what happens before taking action.

Health Systems Subcommittee [Dr. Bruce MacLeod]

Dr. MacLeod noted that barriers related to health insurance are complex and changing. Even a single health insurance plan can comprise many different plans with different coverage. The data are not clean, and there is no clear direction at this time for improving the situation in which persons are denied coverage for calling 9-1-1.

During the discussion, participants noted the need to identify alternate strategies that may make the health care system more responsive:

- Instead of bringing the patient to the hospital, bring the hospital to the patient's bedside at home by sending a paramedic who can do an ECG, consult with a physician, and then advise the patient about the need to go to the emergency department and have appropriate followup.

- Make use of telemedicine. It has worked well in correctional settings.

- Use new technologies, for example, a vest that monitors heart rhythm.

- Change the service to the public. If calling 9-1-1 brings a fire truck, police, and lights and sirens, this may provoke embarrassment and be a deterrent to calling. In Scandinavia, the response was made more discreet to encourage the reticent population to call.

- The committee should try to influence reimbursement strategies for physicians. ("Show me the money" is an important motive.)

- The committee should try to influence organizations that set standards for medical care, such as the National Center for Quality Assurance (NCQA), which produces HEDIS measures concerned with clinical pathways and case management, and peer review organizations (PROs), which look at indicators and develop quality index systems within hospitals, such as time to reperfusion and other therapies. Committee members should encourage these organizations to include the NHAAP perspective in their standards. It was noted that an earlier effort to influence HEDIS was not successful.

- The medical director of HCFA's Acute Myocardial Infarction Project has asked the Coordinating Committee for comment on indicator medical standards. (All participants at a December 1997 conference received this request.) Mary Hand will forward this correspondence to the Science Base Subcommittee.

REVIEW OF COORDINATING COMMITTEE AGENDA [Committee]

Ms. Hand introduced a review of the committee's agenda. She noted that the report on the October meeting was included despite the danger of possible confusion with the report given yesterday. She asked participants for advice on how to best use the final session—whether to hold a general discussion about where the program should go or have Dr. Atkins provide a summary. It was decided that Dr. Atkins would provide a wrap-up.

Dr. Atkins said that the committee needs to digest the REACT study's data for several weeks, then hold a conference call to elicit ideas about where to go from here, and, ultimately, develop recommendations. Conclusions at this time would be premature. Dr. Lenfant agreed that the committee should study the data and convene again to review the findings and develop a strategy. He noted that the NHLBI has been asked by Congress to convene an interagency debate in the fall to examine trends in cardiovascular disease. The REACT study might be discussed as part of the agenda of that conference.

ATTACHMENT A

LIST OF ATTENDEES

NATIONAL HEART ATTACK ALERT PROGRAM (NHAAP) COORDINATING COMMITTEE MEETING

May 3–4, 1999

Organization	Representative
Agency for Health Care Policy and Research	Daniel Stryer, M.D.
American Academy of Family Physicians	Roger B. Rodrigue, M.D., M.P.H.
American Academy of Insurance Medicine	Lawrence D. Jones, M.D.
American Association for Clinical Chemistry, Inc.	Robert H. Christenson, Ph.D.
American Association of Critical Care Nurses	Kathleen G. Keenan, R.N., M.S., C.C.R.N.
American Association of Health Plans	Absent
American Association of Occupational Health Nurses	Hannah Y. Ruggiero, R.N., COHN-S
American College of Cardiology	James M. Atkins, M.D., F.A.C.C.
American College of Chest Physicians	Denise Hirsch, M.D.
American College of Emergency Physicians	Mark S. Smith, M.D.
American College of Occupational and Environmental Medicine	Position Vacant
American College of Physicians	Robert A. McNutt, M.D.
American College of Preventative Medicine	Mark B. Johnson, M.D., M.P.H.
American Heart Association	Joseph P. Ornato, M.D., F.A.C.C., F.A.C.E.P.
American Hospital Association	Position Vacant

American Medical Association	Position Vacant
American Nurses Association, Inc.	Christine M. Crumlish, Ph.D., R.N.
American Pharmaceutical Association	M. Ray Holt, Pharm.D.
American Public Health Association	William J. Schneiderman
American Red Cross	Alexander R. Kuhn, M.P.H., NREMT-P
Association of Black Cardiologists	Gerald DeVaughn, M.D., F.A.C.C.
Centers for Disease Control and Prevention	Wayne H. Giles, M.D., M.S.
Department of Defense, Health Affairs	Absent
Department of Veterans Affairs	Pamela Steele, M.D., M.P.H.
Emergency Nurses Association	Julie Bracken, R.N., M.S., C.E.N.
Food and Drug Administration	Arthur A. Ciarkowski, M.S.E., M.B.A., M.P.A.
Health Care Financing Administration	Jay Merchant, M.H.A.
Health Resources and Services Administration	Absent
International Association of Fire Chiefs	Mary Beth Michos, R.N.
International Association of Fire Fighters	Lori Moore, M.P.H., EMT-P
National Association of Emergency Medical Technicians	Absent
National Association of EMS Physicians	Bruce A. MacLeod, M.D., F.A.C.E.P.
National Association of State Emergency Medical Services Directors	Jimm Murray
National Black Nurses Association	David E. Simmons, Jr., M.S.N., R.N.
National Center for Health Statistics (CDC)	Absent

National Heart, Lung, and Blood Institute	Claude Lenfant, M.D.
National Heart, Lung, and Blood Institute Ad Hoc Committee on Minority Populations	Absent
National Highway Traffic Safety Administration	Jeffrey Michael, Ed.D.
National Medical Association	Charles Curry, M.D.
Society for Academic Emergency Medicine	Robert J. Zalenski, M.D., M.A.
Society of General Internal Medicine	Harry P. Selker, M.D., M.S.P.H.

NHAAP Advisors

Angelo A. Alonzo, Ph.D.	The Ohio State University
Allan Braslow, Ph.D.	Agency for Health Care Policy and Research
Costas T. Lambrew, M.D.	Maine Medical Center

NHLBI Staff

Amy Danzig
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Peter G. Kaufmann, Ph.D.
Christine B. Krutzsch
Terry Long
Gregory J. Morosco, Ph.D., M.P.H.
Nancy J. Poole, M.B.A.
Michael Proschan, Ph.D.
Frederick Rohde, M.A.
Denise G. Simons-Morton, M.D., Ph.D.
Ellen Sommer, M.B.A.

Guests

Penny Casebolt, R.N.	Mary Washington Hospital
John Finnegan, Ph.D.	University of Minnesota
Patricia Hamilton	American Heart Association

Carole Johnson	American Heart Association
Lisa A. Kiger, R.N., M.S.N., C.C.R.N.	Wake Forest University Baptist Medical Center
Russell Luepker, M.D., M.S.	University of Minnesota
Jane Zapka, Sc.D.	University of Massachusetts Medical School

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